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# *The* EXTENSION ANIMAL HUSBANDMAN



UNITED STATES DEPARTMENT  
OF AGRICULTURE  
WASHINGTON,  
D.C.



UNITED STATES DEPARTMENT OF AGRICULTURE

Washington, D. C.

THE EXTENSION ANIMAL HUSBANDMAN

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## PERFORMANCE TESTING IN BEEF CATTLE

By Bradford Knapp, Jr., Associate Animal Husbandman,  
Bureau of Animal Industry, U.S.D.A.

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Animal husbandmen have recognized for many years differences in beef cattle in their response to feed. We called those animals that responded well "good doers" while the animals that just never got on feed right were "poor doers." This difference was hinted to be hereditary but attempts to measure these differences were seldom tried. Many times the statement has been made of various bulls that their calves were "easy keepers," or that they fattened readily. The problem was to devise methods of measuring that rather intangible attribute in cattle we have all observed.

There were many problems to be solved before a performance program in beef cattle could be devised. Was type or conformation an index to rate or efficiency of gain? Investigations showed that there was a slight relationship but this relationship was so poor that you were likely to be wrong nearly as often as you were right. If conformation is a poor index, then some means must be devised to measure consistent differences between calves from several sires. By simple reasoning we can arrive at some conclusions with regard to any test applied. First, each calf must have the same opportunity to develop as every other calf. Second, the test should measure the qualities desired, namely efficiency of gain and carcass quality. Third, the test should be completed as early an age as possible. Fourth, the test, if it is to be of use in the field, must be practical and as simple as possible yet measure the qualities desired.

In the Bureau studies, several periods of a calf's life were studied as a possible means of evaluating efficiency of gain. It was found that under certain conditions the feed-lot period gave the best results. As a result of these studies the Bureau proposed a method based on feed-lot performance. This method required each calf to weigh 500 pounds at the start of the feeding period and 900 pounds at the finish. There are several reasons why it was necessary to have a weight-constant period rather than a time-constant period. It is well known that the weight of an animal has a direct relationship to the amount of feed required for maintenance. By making weight constant, variation due to maintenance is eliminated and a comparison between animals is possible. Carcass qualities should not be compared when animals have made different gains on feed for there is a close relationship between total gain and fatness. Then, by feeding as much to each steer as he will consume we

have left it up to each steer to demonstrate his ability to utilize feed to the maximum of his inherited ability.

This method has been simplified by devising correction factors for weight and gain so that it is now possible to feed steers not the same in weight and gain, yet they may be compared. These corrections are made just in the same manner as the dairyman corrects his milk production to a standard. Lot feeding can be used where the progeny of each bull are fed as a group. The group must be fairly uniform as regards weight and age. There are many possible variations in these methods.

Examples of individual variations in steers and variations between the progeny of different sires may bring out the value of performance testing in beef cattle. Four beef Shorthorn steers at Beltsville, Md., all grading Choice as slaughter steers, made the following performance record:

Steer No.	Days on feed	Daily gain (pounds)	Feed to produce 400 lbs. gain	
			Grain (pounds)	Hay (pounds)
1	239	1.71	1,930	864
2	225	1.77	2,251	926
3	306	1.35	2,796	1,174
4	287	1.38	2,809	1,768

Steer No. 1 was a "good doer," made a fairly rapid gain on little feed, while No. 4 was a "poor doer." As a feeder calf No. 4 was the outstanding calf of the four calves in conformation. The progeny of sires also take different amounts of feed to produce gain. The feed required to produce 100 pounds of gain by the progeny of several sires was as follows:

Sire No.	Breed	Average feed consumed by progeny to produce 100 pounds of gain	
		Grain (pounds)	Hay (pounds)
1	A	618	386
2	A	504	297
3	A	598	319
4	A	643	351
5	B	555	268
6	B	543	270
7	B	502	241

It is quite obvious the best sire in breed A is No. 2, while the poorest is No. 4, and in breed B, No. 7 is the best sire and there is little difference between sires 5 and 6. The above are only a few examples of the results of experimental testing of beef-cattle

sires. The results are not the extremes observed in our work but rather show some of the differences that may be expected between almost any group of sires.

The work of the Bureau has demonstrated a few facts. First, that measurable differences do exist between steers in their ability to utilize feed. Second, these differences are inherited, since consistent measurable differences between sires can be demonstrated. Third, methods are available and more are being developed to make possible a general field application for measuring this economically valuable attribute of beef cattle.

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#### "DO UNTO ANIMALS --"

Loan copies of the U.S.D.A. motion picture "Do Unto Animals --," which has to do with the reduction of livestock shipping losses are now available from the following State institutions -

Extension Division, University of Arizona, Tucson  
Extension Division, University of California, Berkeley  
Bureau of Visual Instruction, University of Colorado, Boulder  
University System of Georgia, Atlanta  
University of Illinois, Urbana  
Extension Division, University of Indiana, Bloomington  
Visual Instruction Service, Iowa State College, Ames  
University of Kansas, Lawrence  
Extension Service, University of Michigan, Ann Arbor  
University of New Hampshire, Durham  
New Jersey State Museum, Trenton  
Bureau of Visual Instruction, University of North Carolina,  
Chapel Hill  
Visual Instruction Exchange, State Department of Education,  
Columbus, Ohio  
Oregon Agricultural College, Corvallis  
Extension Division, University of South Carolina, Columbia  
Extension Service, South Dakota A. & M. College, Brookings  
Visual Instruction Bureau, University of Texas, Austin  
University of Vermont, Burlington  
State College of Washington, Pullman  
University of Wisconsin, Madison

This picture which is of two reels' length in sound form is in wide demand, hence prospective users should make application for it as far in advance as possible. It is available in 16mm and 35mm widths.

-----oOo-----

Livestock is an essential factor in the mineral-plant-animal cycle, basic to all sound agriculture. Agriculture without livestock is a violation of natural laws and leads to mining the soil of its fertility. --Harcourt A. Morgan, TVA

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## LIVESTOCK IN HAWAII

By Frank G. Sutherland, Extension Animal Husbandman,  
University of Hawaii.

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Most of the people living in the Territory of Hawaii, especially the "Kamaainas" (those who have lived here a long time) understand quite clearly that there are still millions of mainlanders who as yet are not aware of the various types and scope of farming enterprises carried on here in the "Paradise of the Pacific."

Most all mainland people are familiar with the fact that our two major agricultural crops are sugar and pineapples. Few realize, however, that the third largest agricultural enterprise is beef-cattle raising. Sales now represent an annual income of well over two million dollars.

On the island of Hawaii, or the "Big Island" as it is commonly called, is located the Parker Ranch. This is the second largest beef ranch in the world. It lies in a vast saddle-like area between two large volcanic mountains, one of them, Mauna Loa, recently active. Both of these mountains are over 13,000 feet in elevation and during our so-called winter months are capped with snow and ice. The Parker Ranch consists of approximately 300,000 acres of some of the finest year-around pasture areas to be found anywhere. 33,000 head of almost all purebred Hereford cattle can be found ranging on this area. Many of the finest purebred Hereford bulls that money could buy have been shipped over in the past from the mainland. Much fertilization and planting of better pasture grasses have been done and scientific breeding practices and rotation of paddocks have been very effectively carried on, with resultant increases in carrying capacity and profits.

Our April 23, 1940, Weekly Market Report published by the Extension Service here at the University of Hawaii shows that to date this year 4,211 live steers and 106,757 pounds of dressed beef have been shipped to Honolulu from the off-islands. Oahu, the island on which Honolulu is situated, also raises a large amount of beef.

An increasing amount of interest is being shown by many of the 94 different cattle ranchers in the island in improving the carrying capacity of their pastures as well as in breeding and dry-lot feeding. These ranches have a total area of 725,432 acres and were carrying approximately 121,850 head of beef cattle on January 1 this year.



Over 120 different dairies, large and small, are to be found scattered throughout the islands. They have a total of more than 8,600 cows, with one of the largest herds consisting of 840 head, practically all Holsteins and Guernseys.

Fifteen different herds comprising 1,366 cows are now enrolled in the DHIA, (Dairy Herd Information Association), giving us almost a 16 percent membership in this association. As time goes on, it is hoped that this percentage can be increased. Many dairymen are now aware of the advantages to be obtained from membership in the DHIA. The average production of the 15 herds enrolled was 18 pounds per day per cow for the month of March, 1940.

The extension staff has quite naturally cooperated fully with the staff of the University of Hawaii Agricultural Experiment Station in Honolulu, and its branches, in all matters pertaining to agricultural improvement and development throughout the islands. It is very gratifying to be able to state that as a result of this effort a great deal of effective work has been accomplished with many of the livestock men in the territory. Many experiments have been carried on here at the university and much stress has always been put upon the importance of purebred sires, pasture improvement, DHIA work, ton-litter and litter-production contests and particularly the feeding of more locally produced economical by-product feeds, such as pineapple bran and cane molasses. Also considerable pineapple sirup is being economically fed to young pigs here in Honolulu where the largest fruit cannery in the world is located--The Hawaiian Pineapple Company.

Liverfluke prevention, treatment, and control have received much attention. Dr. J. Alicata, the parasitologist here at the university, has specialized on this particular parasite of livestock and much has been accomplished. The dairymen in particular are very appreciative of the help that has been given them in eradicating liver-fluke infestation from their herds and pasture areas.

No recent survey has been made of the hog industry in Hawaii, but it is definitely known that the number of families and individuals who now receive some income from raising hogs has increased considerably during the past three years. There are approximately 2,000 separate places in the islands where a total of at least 45,000 pigs are being raised. Many purebred sires and bred gilts have been imported and at the present time we have a few local breeders who can supply the local demand for good purebred breeding animals.

Two ton-litter contests have been completed and at the present

time a new contest called the Litter Production Contest is in progress with a total of 102 litters enrolled since November 6, 1939. It will continue to November 5, 1940. Of course many of the entrants have finished their 56th-day growth period after farrowing and some of the final weights obtained by litters having 8 or more pigs are exceptionally promising. Thirteen of the 40 litters which have finished weighed over 340 pounds per pig. Only 18 of the 102 litters entered up to date have been disqualified due to their having less than 8 pigs which averaged at least 20 pounds each on the 56th-day after farrowing. The average weight of 40 litters which have finished the contest is 297.62 pounds per pig. The average size of litters completing the 56-day period up to date is 9.77. Only six litters have had as few as 8 pigs finishing the contest. The others were between 9 and 13.

Hog men are becoming more and more interested in increasing their profits through the adoption of practices recommended to them by their county agents. Many junior and adult pig clubs are being carried on with results which are unusually encouraging.

Fortunately for us here in Hawaii, it is possible to obtain practically any climatic condition needed for economic production of many of our agricultural crops. This is especially true in respect to beef and dairy cattle raising, but pigs do exceptionally well here wherever they are raised. We have no winter or hot, dry season, only mild changes of temperature and rainfall throughout the year. Of course the amount of each depends entirely upon the elevation and exposure (leeward or windward side of the island) on which one happens to be living. Practically all farmers on the six important islands experience this same condition. While there is very little exchange of ownership or leasing of land or migration of farmers, the fact remains that conditions on the whole are very favorable to agriculture here in Hawaii.

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#### "SOCIETY" PROCEEDINGS, 1939

The printed proceedings of the 1939 annual meeting of the American Society of Animal Production consisting of a volume of 488 pages, is now out and has been sent to all paid-up members by Secretary R. M. Bethke of the Ohio Agricultural Experiment Station, Wooster, Ohio.

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I don't like these cold, precise, perfect people who, in order not to speak wrong, never speak at all and in order not to do wrong never do anything. --Henry Ward Beecher

-----oOo-----

Feelings may rule the world but facts may be used to guide feelings. --Roger W. Babson

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## IMPROVING LIVESTOCK CONDITIONS IN PUERTO RICO

By Frank Pico, Animal Husbandry Specialist,  
University of Puerto Rico, Rio Piedras, P. R.

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During the last five years there has been a marked improvement in the livestock industry in Puerto Rico. It has been brought about mainly by the extension program that has been carried on during this period. Farmers have become aware of the importance of adopting new and improved practices in breeding, feeding, and management and the results have been most encouraging in spite of the fact that we have been laboring under two great difficulties:

- (a) Lack of economical home-grown feeds
- (b) Abundance of diseases and parasites common to the tropics

Aside from the dairy animals, our most important classes of livestock are draft oxen, swine, horses, and mules. Sugar growing, which is our largest agricultural enterprise, could hardly survive in the absence of the work oxen employed in hauling the cane from the fields to the factory, to adequate roads or to railroad stations. Swine raising is considered second in importance to work oxen and while we do not have any commercial swine raisers to speak of, most farmers keep a few hogs either for home consumption or as an additional source of income. Under prevailing conditions, swine raising on a commercial scale is almost out of the question due to the fact that all our good land is devoted to sugar cane and we cannot compete with continental United States and other countries in growing grains economically. According to the last census, the total number of swine in Puerto Rico was around 103,689 head. When we consider that we have 55,000 farms in the Island, this indicates that the average farm keeps two head of swine. The horses and mules are very important for cultivation purposes, for pleasure, for hauling around the wharves and in the interior of the Island, where they constitute the only means of transportation.

The race horse is perhaps our highest priced animal. We have at present four race tracks in the Island. For riding purposes, horses are very popular and frequently they command high prices. According to the last census, there were on the Island 4,545 horses, 6,922 mules and 9,109 asses and donkeys.

Outside of our coastal plain, the topography of our land is very hilly. Trucks and automobiles cannot reach many areas because of the lack of roads. As previously indicated, it is at these points that horses and mules are serving a very useful purpose for hauling coffee and other agricultural products. Puerto Rico imports annually more

than \$3,000,000 worth of pork and pork products. It is obvious, therefore, that swine production needs encouragement at least to the point where this industry will meet local food needs. Our extension work has been centered around this objective and during the last five years we have maintained at each of our nine demonstration farms many purebred Duroc-Jersey boars for free breeding services. This seemed to be the first necessary step in our livestock improvement work because our native breed is a degenerate animal of non-descript breeding - similar to the "razor back" in the United States and even smaller. Not only have we been furnishing free breeding services but we have also kept a few purebred sows for the production of weanling pigs which are sold at nominal prices to farmers who agree to feed and care for them as recommended by the Extension Service.

In 1939, 118 purebred Duroc-Jersey sow pigs and 111 boar pigs raised on our farms were placed in the hands of interested farmers and 4-H club members. During the past year the purebred boars served 1,244 sows.

To complement this breed improvement activity, many demonstrations have been conducted for the purpose of teaching better feeding and management methods. Of all these demonstrations perhaps the most influential ones have been those conducted on our own farms with the purpose of demonstrating the value of adding tankage to swine rations. To most farmers tankage was an unknown feed material but as a result of these demonstrations we find today that many are making use of it consistently. During 1939 swine extension work was carried on in 350 communities where 153 adult result demonstrations and 397 method demonstrations were conducted. These demonstrations have shown that the benefits per animal have increased from \$2 to \$5, when our recommendations were followed.

The animal husbandry assistant has devoted over 60 percent of his time to swine club work. Over 575 club members out of a total of 960 carrying on swine work were contacted by him during last year. Seven hundred and sixty-nine club members finished their work for the year with a total of 1,394 head of swine involved in the completed project. We have been able to prove that swine will grow and fatten as well in Puerto Rico as in the United States. Weanling pigs that weigh 30 to 40 pounds and 6- to 7-months-old barrows that weigh 245 pounds are no longer thought of as impossibilities.

At this moment we are about to begin some work in sow testing. Progeny performance will be used as a basis in determining the commendable sows. The weights at 21 and at 56 days of age will be considered and for the sows kept at our demonstration farms, we shall consider also birth weights.

In order to alleviate the disease conditions, our county agents received constant advice from the extension veterinarian and during the last year 247 head of swine were castrated and 3,635 were vaccinated against hog cholera. Our hog-cholera campaign has been very encouraging. While in 1936 there were 5,500 cases reported by the extension agents only 1,390 cases were reported in 1939. This shows a reduction of 75 percent which undoubtedly is an indication of the success of the campaign as carried on by the field personnel under the leadership of the extension veterinarian.

In spite of the fact that motor trucks and modern farm machinery have displaced many of our horses and mules, there is a need for improving our riding horses and our horses and mules for field work. We have been trying to create a more intense interest in the matter through fairs and exhibitions where farmers have a chance to see the characteristics which they should look for in these animals. Last year horse and mule work was carried on in 49 communities where 15 adult demonstrations and 21 method demonstration meetings were conducted and 18 farmers were assisted in obtaining purebred stallions.

In the improvement of our native work oxen we have constantly advocated the introduction of zebu blood in order to increase the size and stamina of our native oxen. Today the one-fourth to one-half blood zebu is considered our best work animal. A higher concentration of this blood is not advisable because the animals tend to be mean and hard to handle.

Pulling contests have been conducted at our animal fairs and prizes have been awarded to the yoke that pulls the most. Standard carts are used and the weight is regulated by sand bags. When the word to start is given the oxen have to pull from one point to another along a level track without stopping. These contests have proved to be very popular and attract large crowds.

The basis of our meat supply lies in the undesirable work oxen of native or zebu blood and in culled dairy animals. Distinctly meat breeds such as Aberdeen-Angus and the Hereford are very rare. It seems that inasmuch as work animals command much higher prices than beef animals, local cattlemen devote all their attention to the production of the former.

Apparently there are great opportunities for the production of beef cattle but when conditions are studied carefully it is not difficult to realize that the high price of land, the lack of home-grown concentrates, the constant demand for work animals, and the limited land available for cattle raising are important factors which inhibit progress along this line.

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He that never changes his opinions, never corrects his mistakes, and will never be wiser on the morrow than he is today. --Tryon Edwards  
-----oOo-----

## ILLINOIS LIVESTOCK PROJECT ENROLLMENT

By E. T. Robbins, Livestock Extension Specialist,  
University of Illinois.

- - -

A new feature of the livestock management project in Illinois is an enrollment of cooperators to identify the men who are endeavoring to do the best they can with their stock. Promotion of good livestock management methods has been conducted in the past largely through county meetings, tours, and literature. Most of the stockmen are familiar with good livestock management practices. Many of them fail to do anywhere nearly as well as they know how. It is hoped by the enrollment to secure a more general application of good methods.

Several years ago an enrollment card was used which served the purpose well but it did not secure a promise of specific compliance on the part of the cooperators. The new card lists eight good practices which the men agree to use. Besides this, they check the kinds of livestock in which they are endeavoring to improve their methods and they check four items of compliance which are desirable but not absolutely necessary. The signed enrollment cards are kept in the farm bureau office. The county agent uses these as his list of the most progressive stockmen in the county.

The eight good practices which the men agree to use are those which the farm accounts in Illinois seem to show have the most helpful effect upon stockmen's incomes. These practices are as follows:

1. Raise better animals
2. Try to keep stock healthy
3. Have stock fat enough when sold
4. Aim to sell on high markets
5. Try to keep the horses busy
6. Use plenty of pasture and legume hay
7. Buy suitable protein feeds only at low cost per pound of protein.
8. Buy for healthy animals no minerals besides salt and possibly limestone and bone meal.

A summary of the enrollment to date is given in the following table. Enrollment work is still in progress in a number of other counties from which reports have not been received.

Summary of Enrollment  
(1,778 enrolled in 51 counties)

Numbers Checking Items on the Card	
Livestock to be Included:	Good Practices You will Follow:
1,296 Beef cattle	1,236 Use only good purebred sires
623 Sheep	236 Work horses in teams of 5 or more at times
1,639 Hogs	1,053 Explain methods to farmers who ask for advice
876 Horses	474 Lead discussion in local meeting, if asked to do so

The enrollment shows surprisingly good intentions on the part of these stockmen. It is very encouraging to notice that 70 percent of the men enrolled agree to use only good purebred sires upon their farms. It shows a higher general appreciation of good sires than we had supposed the men possessed.

Although tractors are exceedingly numerous upon Illinois farms and in some localities every farmer seems to have one, there persists a high appreciation of horses. The horsemen declare that they will use economical outfits. It is encouraging to notice that one out of eight of the men enrolled has checked the item that he will use teams of five or more horses at times.

A very encouraging situation is shown by the fact that 59 percent of the men enrolled have checked the item indicating that they will be glad to explain their good methods to farmers who ask them for advice. This shows a cooperative spirit, a freedom from jealousy, and a desire to be helpful to farmers in the neighborhood.

The item which gives us the most satisfaction is the last one, in which 27 percent of the men enrolled have agreed to lead the discussion in a local meeting if asked to do so. This means that there is much potential support for the county agents in promoting good livestock methods. Many of them have felt that they could not count upon farmers to help present the discussion on improved livestock management. Now each of the county agents has a list of men who he knows have agreed to help him.

We already have the facilities for using these men. One of the extension projects in this State has been concerned with the organization of local units of farmers in the various counties. Now Champaign County has 26 units, McDonough 25, Bureau 21, Livingston, Ogle, and

Henry each have 18, Sangamon 17, and most of the other counties have several units already organized. Obviously it is impossible for the county agent to attend all of their meetings because usually they are held once a month during much of the year. Where local leaders have been tried they have been very helpful in connection with these unit meetings.

Each cooperator who signs a card is supplied with a four-page folder giving a brief discussion of the eight good practices which he has agreed to follow. Each one also is supplied with a four-page outline about the good methods to be followed with each of the kinds of livestock he has checked. Each of the discussion leaders is supplied with a 15-page outline covering 80 items of good livestock management. This is designed to help these men lead the discussion along safe and correct lines and keep them from going astray in any of their statements. Each item is complete in itself and so is adapted to the needs of men who may be rather elementary in their technical knowledge.

Each three months the county agency is supplied with a two-page statement of short items about good livestock management. This is sent in sufficient numbers so that he can forward a copy to each cooperator, along with a letter of encouragement from him.

As far as we have gone with this improved phase of the livestock management project we find that it is serving to identify a group of really good, progressive, and studious stockmen in each of the counties. They seem to appreciate the fact that they have agreed to follow certain definite, specific, good practices which the farm accounts have shown to pay. Their promise to follow these methods helps them to make a greater effort to do as well as they know how to do with their stock. The system we are following of maintaining contact with these men and offering them continuous encouragement seems to supply their desire for helpful suggestions and leadership in this work. We hope by this means to extend very greatly the influence of the Extension Service among the stockmen of the State.

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#### "GREEN ACRES"

"Green Acres," is the title of a new two-reel silent motion picture released by the National Fertilizer Association of Washington, D. C. It is one of the first all-color 16 millimeter films to be produced for use in agricultural education.

The story is that of pasture improvement and management and the picture is available to State extension workers. Apply to above organization giving preferred date or dates.

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It isn't what you know, but how well you know how to use what you know, that really counts. --James W. Elliott

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## NEBRASKA BECOMES SHEEP MINDED

By Walter Tolman, Assistant State Extension Agent,  
Animal Husbandry,  
Nebraska College of Agriculture.

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Sheep are fast becoming popular in Nebraska. The Extension Service has had a large part in pointing out how farm flocks can fill the need for a class of livestock which will convert roughage and a minimum amount of grain quickly into cash. Sheep have taken the place, in part, of hogs forced off Nebraska farms by the last six years of drought and low grain production.

The increased interest in sheep is reflected by the attendance at sheep meetings. In 1936 the first sheep extension work that had been done for years drew 191 farmers to 9 meetings. The growth of interest in these meetings has been steady until last year 5,199 farmers attended 139 sheep extension meetings. The spring sheep and wool meetings for 1940 have just been completed with an increase of 40 percent in attendance over those of 1939. Six thousand, eight hundred and seventy sheep producers are now reached by a series of eight timely letters on sheep management.

That the recommendations of the Extension Service have been followed is shown by a survey made last fall to check acceptance of the practices advocated. The points urged in the extension program are: (1) Adoption of a sheep enterprise when the feed, equipment, and personality of the operator promise success with it, (2) a flock unit of 30 to 40 ewes, enough to justify some special equipment and care, (3) early lambing, generous feeding, and marketing of lambs before June 15 to take advantage of a favorable market season and to avoid difficult feeding conditions due to heat and worm infestation occurring in the summer months, (4) use of purebred rams, (5) ewes of ages when production is highest, feed requirement lowest, and death loss least. The survey showed: (1) 33 percent increase in farm sheep numbers during the last four years, (2) 35 percent of lambs marketed before June 15 in 1939 compared to 19 percent in 1935, (3) 38 percent purebred rams compared to 18 percent in 1935, (4) A 16 percent increase in the number of ewes between 2 and 5 years old.

The county sheep and wool meetings are perhaps the most effective part of the program. These are all-day meetings held in cooperation with the Midwest Wool Marketing Association. The morning session is at the farm of a successful sheepman. The flock and equipment are inspected and discussed. Docking, castration, drenching and **ewe culling** are demonstrated. There is no difficulty in using a full two hours in questions and answers.

The noon lunch is a social event with lamb as the heart of the meal, through the courtesy of the wool marketing association. The highlight of the day, an interview of four or five outstanding sheepmen, opens the afternoon meeting. The interview is a rather informal roundtable with questions and experiences from the floor as well as from the farmers interviewed, the specialist, and the county agent. Besides the lunch the wool marketing cooperative contributes a talk on wool marketing and the marketing outlook and 30 minutes of educational moving pictures.

Proper methods of feeding and management are brought to the sheepmen's attention throughout the year by radio and news releases, talks at general livestock and feeder meetings and by a series of timely letters sent to producers over the signatures of the county agent and the State specialist. These brief illustrated letters, prepared in the State office, have received a great deal of favorable comment.

Other meetings include lamb-grading demonstrations, 70 of which were attended by 865 persons last year, one week's shearing demonstrations, 4-H judging days and 4-H lamb fitting and showing demonstrations at which 262 boys handled cards and clippers last year. In connection with the State Purebred Sheep Show and Sale, the State Sheep Meeting is held. Outstanding speakers appear on this program which was attended by 400 last year.

One of the big problems in a period of expansion in sheep numbers has been to secure good breeding stock. All too frequently the low cost and ready availability of broken-mouthed ewes and scrub rams have appealed to the new sheepman. He has reasoned that it is wise to try the sheep business with as little investment as possible. Likewise unscrupulous dealers have sold such stock to inexperienced farmers representing it as of good quality. Since aged ewes are beset by all the difficulties to which sheep are heir and only satisfactory when well fed and cared for, the beginner with this class of stock and a firmly fixed idea that sheep require little or no grain, has usually been disappointed and has blamed the sheep business rather than the class of sheep he has tried to handle.

The advantages of ewes 2 to 5 years of age and of thick, well-bred rams, have been stressed. County agents have been kept informed as to sources of purebreds and of young grade ewes. White-faced western yearlings have been recommended as foundation stock and as replacements when spring lambs are produced. Largely through the efforts of Extension Service cooperative purchases of 12 carloads of these ewes have been made by Nebraska farmers in 11 counties during the last two years. The demand of farmers has caused dealers to handle a much younger and better grade of ewes than they did a few years ago.

One of the most effective methods of increasing interest in good breeding stock was the "sheep breeding stock truck". A truck was loaded with an excellent purebred ram and a scrub, some western yearling ewes, one or two western 2- or 3-year-old ewes to show how the yearlings develop and some cull ewes for contrast. Making two meetings per day this truck moved through the State as the breeding season approached, contrasting desirable and undesirable breeding stock. Management for the early breeding season was also discussed. No sheep extension work has been more appreciated.

4-H sheep clubs have had no small part in the sheep development of the State. The enrollment in the project was below 200 for 15 years but has increased since 1934 to a high of 1,085 last year. Many communities and many farms had their first sheep as 4-H projects. The club boys have demonstrated good sheep management and many now as purebred breeders are producers of seed stock and superior rams for their neighborhoods.

The goal of extension in its sheep program is to help establish farm sheep production as a major livestock industry of the State rather than permit it to become an example of an overexpanded business.

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#### MARYLAND 4-H LAMB FEEDING PROJECT

Maryland's second 4-H Club western lamb feeding project was concluded at the annual show and sale held at the Union Stock Yards, Baltimore. This special exhibit was held under the auspices and management of the regular Baltimore Livestock Show.

Twenty-two 4-H Club boys exhibited and marketed a total of 441 lambs. Of this number 232 graded "Choice," 186 graded "Good" and 23 were classified as "Medium to Common." Cash awards were paid on the basis of the market grade of the lambs. George Lechliden, of Montgomery County, had 27 Choice and 3 Good lambs in his pen of 30, winning top cash award.

Special trophies were awarded on a basis including the market grade, rate and economy of gain, practicability of the ration, and the neatness, completeness, and accuracy of the records. William Hare, of Carroll County, excelled in the combined phases of the project and received the championship trophy awarded by the Union Stock Yards. The Baltimore and Ohio Railroad supplied special ribbons and medals which were awarded to members excelling in all points. The boys were luncheon guests of the Livestock Exchange.

Western lamb feeding is practically a new enterprise in Maryland. Four-H Club members are pioneering as they demonstrate its practicability. --Mylo S. Downey, Asst. State 4-H Club Agent, Md.

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## WEST VIRGINIA FEEDER CALF SALES

By H. L. Riggle, Assistant Extension Animal Husbandman,  
West Virginia University.

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One of the important and far-reaching West Virginia animal husbandry extension activities is the feeder calf sales. The work was instituted in 1931 as a medium of disposition or a marketing outlet for the product produced by West Virginia's "self-liquidating industry", the cow and calf project.

Naturally, there existed a more important purpose behind the sales than just a marketing outlet for feeder calves. It was designed, for its educational value, as a practical demonstration in teaching the proper methods of production and preparation of feeder calves for marketing, as well as to teach an orderly, systematic method of marketing. This, consequently, allies the project closely with the cow-and-calf program which is ideally adapted to existing conditions in West Virginia and is the fundamental background to the feeder calf sales. This project has made rapid progress during its 10 years of operation.

West Virginia, generally, is a pasture-producing, rather than a grain-producing State. This is not by choice, but because of its natural topography which consists to a great extent of rolling hills and slopes that are more suitable to pasture production than grain. High-grade legume roughages can be produced economically for wintering purposes. Many of the farms are of small acreage, on which a few high-grade beef cows are kept. As a result, this type of project is suitable to a great number of livestock producers of the State.

The feeder-calf sales are conducted annually and consist of one State sale held at Jackson's Mill, the site of the State 4-H Camp-- and some 5 or 6 regional sales held at the centers of the principal production areas of the State. These sales are sponsored by the West Virginia Livestock Association. The sale operations are conducted under the management of the local cooperative livestock marketing organization for the respective territory. The State sale at Jackson's Mill is the major demonstration, or show window of the project, in which only calves that will grade Choice and Fancy are accepted.

These are received from all the major livestock counties participating, irrespective of whether a regional sale is conducted in their territory or not. Such an arrangement affords a fine opportunity for teaching by observation, since a large group of farmers, 4-H club

members, and extension workers are present at the show and sale. Since the sale is conducted during the Country Life Jubilee, which is the fall round-up, or State show of all 4-H extension projects, an opportunity is afforded to teach the proper type, and the kind and quality of feeder calves desired, as well as the market classes and grades of feeder calves as they are graded and shown in the different classes. Likewise, the same opportunity is presented at all the regional sales where no calves are accepted that will not grade Good or better.

The standards of the project are set up in a memorandum of agreement which is distributed to the producers by the county agents. Along with the memorandum of agreement, the producer is presented with a consignment blank which is filled out by him, and returned to the county agent on or before June 30. This blank furnishes information such as the number, breed, and sex of the calves consigned.

The memorandum of agreement provides that calves, to be eligible for any of the sales, must be sired by a purebred Hereford, Aberdeen-Angus, or Shorthorn bull and out of good grade or purebred beef cows. Calves should be dropped between February 15 and April 30 and should weigh from 350 to 450 pounds at the time of the sale. All bull calves must be castrated, and horned calves dehorned at an early age--preferably when they are 10 days to a month old. All calves are required to be weaned and on dry feed at least 2 weeks prior to the sale. Calves that are to be shown are usually started on a grain ration when three to four months old. Calves that are not getting sufficient milk and grass are generally fed a grain ration for two or three months prior to the sale. Calves that are to be shown in either the State or regional shows must be halter broken.

The memorandum also provides that each exhibitor will be charged not to exceed \$1.25 per calf to cover the cost of feed, caretakers, vaccination, and advertising. All demonstration shows and sales are under the supervision of the county agents and the extension animal husbandman. The county agents are largely responsible for the progress made, as well as the success of the project.

During July and August all calves are inspected on the farms by the county agents and a representative of animal husbandry extension service, and only calves are accepted for the State show and sale that will grade Choice and Fancy. Calves that grade Good or higher are accepted for the regional shows and sales, provided all other requirements are met.

Calves are assembled at the points of sale two days before the sale. On the day of arrival they are identified for ownership by means of serially numbered ear tags, weighed without fill and vaccinated against blackleg. On the day before the sale they are graded into

uniform lots according to breed, sex, size, and quality. The number of calves in each lot varies from 5 to 15 calves, depending on the number of calves fitting the class.

Some of the sales hold shows in connection with the sale. These are held on the morning of the sale day, when the calves are shown according to lots as graded, and winners chosen in the various classes as well as championships established in both the steer and heifer divisions. Suitable ribbons and premiums are awarded the winners. These awards are provided by the State Department of Agriculture and other interested cooperating organizations. These shows have materially strengthened the educational part of the program, and in addition, have promoted friendly competition among the producers.

The calves are sold by the head, at public auction, to the highest bidder in lots as graded. Information is furnished buyers by the distribution of a sale sheet, on which the lots are listed in order of sale. Each lot is described as to sex, breed, number of calves and average weight of the lot. A place for recording purchaser and price of sale is also provided on the sale sheet. All sales are for cash, and the calves as a rule are loaded out on the day of the sale. Calves not loaded out on sale day are held over until the following day without additional charge.

Our experience indicates that the project has won favor with the buyers, since it provides them an opportunity to secure their calves in uniform lots, all dehorned, the steer calves castrated, all calves blackleg-vaccinated, weaned, started on dry feed, and ready to be put on full feed, if the purchaser so desires. Likewise, the seller has been exceptionally well pleased with the methods of operation and prices received for their calves. The distribution of the calves would indicate to some degree the acceptance of the project, since some 40 percent of the 797 calves sold last year through these sales went out of West Virginia into other States. These calves were shipped into Ohio, Pennsylvania, New York, Maryland, and Virginia. Many of them were purchased by return buyers who had purchased in previous years.

The prices received by the producers have been such as to encourage the cow-and-calf project in West Virginia. As a matter of fact, many of the men that formerly were feeding steers are now in the cow-and-calf program. Prices for steer calves in these sales, over the 9-year period have ranged from \$20 to \$70 per head, depending on the general market conditions, while heifer calves have ranged from \$15 to \$50 per head. A tabulation of all the sales over the period from 1931 to 1939 inclusive shows there have been held a total of 43 sales. These sales consisted of 5,732 calves amounting to a gross value of \$166,092.34, or an average of \$35.09 per calf. The

steers in this group numbered 3,874 and sold for \$111,199.78, or an average of \$38.69 per head, while the heifers numbered 1,858 and sold for \$54,892.56 and averaged \$29.54 per head. This, perhaps, is not as up-to-date a cross section of values received by the producer for calves, as if the averages were taken for the past few years' sales. Sales records show that steer calves have averaged from around \$43 to \$47 per head, while heifer calves have ranged from \$35 to \$38 per head during the past few years. This, of course, is due in some degree to market conditions, but more especially is it a reflection of the improvement made by the producers in the quality of calves offered.

The improved quality of the calves may be attributed to several factors. Among these factors are:

First, the breeders are selecting superior cows.

Second, their herds are better fed.

Third, a superior type of bull is now in use. The purebred-sire lesson has been driven home to the breeder by means of these demonstration sales. As a result a purebred-bull show and sale project has been developed, but that is another story.

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#### PERSONNEL NOTES

##### Hawaii

Paul A. Gantt, formerly extension animal husbandman, has accepted a position with the Parker Ranch, Kamuela, Hawaii. Frank G. Sutherland succeeded him in the extension field.

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##### Kentucky

R. C. Miller, sheep extension specialist, contributed a series of timely sheep articles to the Progressive Farmer during recent months.

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##### Maryland

Jos. M. Vial, extension animal husbandman, spent the month of March in New York State conducting beef cattle and horse field work with Cornell extension workers.

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##### Mississippi

Edward E. Grisson (B.S. Mississippi State and M.S. Oklahoma A. & M.) formerly employed as assistant county agent in three Mississippi counties, was appointed assistant extension animal husbandman to assist Paul F. Newell, on June 3.

#### Nevada

Paul L. Maloney, who has been functioning as district extension agent with headquarters at Winnemucca, has been assigned to State-wide livestock extension duties for the summer and fall.

#### North Carolina

Sam L. Williams (B.S. North Carolina State and M.S. Kansas State) formerly assistant county agent in Macon County, was made assistant extension animal husbandman under L. I. Case on June 1.

#### Ohio

Howard Davison, former county agent in Butler County, and a graduate of the University of Illinois, was appointed State swine specialist on May 1.

#### Oklahoma

Forrest W. Beall, who has been assistant extension animal husbandman for several years has been made State leader in animal husbandry extension to succeed Paul G. Adams who was transferred to leader of 4-H club work.

#### Texas

A. K. Mackey, formerly a part-time extension worker with the A. & M. College, became secretary of the Texas Sheep and Goat Raisers' Association with headquarters at San Angelo, on June 1.

#### Virginia

Paul Swaffer became full-time extension specialist on March 1 to succeed Kenneth Litton, resigned to accept private employment. Geo. W. Litton, former Virginia county agent is now devoting one-fourth time to State specialist duties.

#### A NEW MEAT MOVIE

A 2-reel 16 mm sound movie, "Pork on The Farm," has just been completed by the five southeastern States cooperating with the Motion Picture Section of the U.S.D.A. Extension Service. Following a brief illustration of desirable pork production practices, recommended methods for dressing, cutting and curing pork are shown. Chas. E. Bell, Georgia Swine Specialist and K. F. Warner of this office handled the subject matter. Distribution will be by application to the U.S.D.A. Extension Service.

Too often, extension workers believe that knowledge of subject matter guarantees success. Knowledge of teaching skills is as important as, or, in some instances, more important than knowledge of subject matter. This is not to be taken as approving ignorance - but rather as a plea that more knowledge about the actual job of teaching is necessary. --Irving Lorge, Columbia University.



## U.S.D.A. EDUCATIONAL CHARTS

The series of educational charts prepared some years ago primarily for 4-H club and school use have been revised and are now available in the new form from the Government Printing Office, Washington, D.C. A copy of each set has been sent to the director of extension service of each State and territory.

The charts are identified as follows -

### Group No. 1 - Livestock

- Chart No. 1.1 - Breeds of Beef Cattle I
- " " 1.2 - Breeds of Beef Cattle II
- " " 1.3 - Beef and Dual Purpose Breeds of Cattle
- " " 1.4 - Breeds of Hogs I
- " " 1.5 - Breeds of Hogs II
- " " 1.6 - Hog Production I
- " " 1.7 - Hog Production II

Price of above seven charts - 25 cents

### Group No. 2 - Horses

- Chart No. 2.1 - Draft Breeds of Horses
- " " 2.2 - Light Breeds of Horses

Price of above two charts - 10 cents

### Group No. 4 - Sheep, Goats, and Mohair

- Chart No. 4.1 - Breeds of Sheep
- " " 4.2 - Wool Production
- " " 4.3 - Some Grades of Wool

Price of above three charts - 15 cents

### Group No. 7 - Meat Identification - Pork and Lamb

- Chart No. 7.1 - Rough and Trimmed Pork Cuts
- " " 7.2 - Rough and Trimmed Ham and Shoulder
- " " 7.3 - Pork Loins and Chops
- " " 7.4 - Bacon, Bacon Trimmings, and Jowl Bacon
- " " 7.5 - Wholesale Cuts of Lamb
- " " 7.6 - Less-Known Cuts of Lamb
- " " 7.7 - More Popular Lamb Cuts

Price of above seven charts - 25 cents

In larger quantities these charts are available at prices below those listed above. Apply to Superintendent of Documents, Government Printing Office, Washington, D.C., for specific information. Another series, "Meat Identification - Beef" will be available soon.

## RECENT PUBLICATIONS

(This list is limited to publications of interest to extension workers. In most cases copies are available from the institution or agency issuing them. Do not write Washington for other than U.S.D.A. publications.)

### Federal

"Western Grass" - Agricultural Adjustment Administration, U.S.D.A., Washington, D. C. - Leaflet G-98, illus.

"Estimated Production and Consumption of Federally Inspected Meats, 1939" - Mimeographed tables for each variety of product, issued by the Agricultural Marketing Service, U.S.D.A., Washington, D. C.

"Weight and Cost of Livestock Slaughtered under Federal Inspection, 1939" - Mimeographed tables by species of animals, issued by the Agricultural Marketing Service, U.S.D.A., Washington, D. C.

"Livestock, Meats, and Wool Market Statistics and Related Data, 1939" - Agricultural Marketing Service, U.S.D.A., Washington, D.C., pp. 106, tables. (Mimeo.)

"Approximate Physical Composition of the Primary Cuts from Steer Carcasses of Different Market Grades," by O. G. Hankins, Bureau of Animal Industry, and M. T. Foster, Agricultural Marketing Service, U.S.D.A., Washington, D.C., Apr. 1940, pp. 3. (Mimeo.)

"Report on Infectious Equine Encephalomyelitis in the United States in 1939," by J. R. Mohler, Bureau of Animal Industry, U.S.D.A., Washington, D. C. - Jan 1940, pp. 5. (Mimeo.)

"Feeding Dogs," by S. R. Speelman, Bureau of Animal Industry, U.S.D.A., Washington, D.C. - 1940, Yearbook Separate 1716, pp. 15.

"Composition of the Principal Feedstuffs Used for Livestock," by N. R. Ellis, et al, Bureau of Animal Industry, U.S.D.A., Washington, D.C. - 1940, Yearbook Separate 1725, pp. 10, tables 2.

"Nutritive Value of Miscellaneous Feeds," by E. W. McComas, Bureau of Animal Industry, and T. E. Woodward, Bureau of Dairy Industry, U.S.D.A., Washington, D.C. - 1940, Yearbook Separate 1722, pp. 10.

"Production of Hogs Suitable for Wiltshire Sides," by R. E. Hutton and E. Z. Russell, Bureau of Animal Industry, U.S.D.A., Washington, D.C. - Circular 532, Nov. 1939, pp. 35, tables 25.

"A Cattle Fly Trap for the Control of Horn Flies," by W. G. Bruce, Bureau of Entomology and Plant Quarantine, U.S.D.A., Washington, D.C. - Mimeographed publication E-498, March 1940, pp. 9, Figs. 3.

"Extension Activities for Older Farm Youth," by Eugene Merritt, Extension Service, U.S.D.A., Washington, D. C. - Ext. Serv. Circ. 326, Mar. 1940, pp. 18. (Mimeo.)

"Publications of the Extension Service, U. S. Department of Agriculture" - Extension Service, U.S.D.A., Washington, D.C. - Ext. Serv. Circ. 323, Jan. 1940, pp. 25. (Mimeo.)

"For Better Rural Living" (A Report of Cooperative Extension Work in Agriculture and Home Economics in 1938) - Extension Service, U.S.D.A., Washington, D.C. - Mar. 1940, pp. 45, tables 15.

#### State

"Could Hogs Be Sold by Carcass Weight and Grade in the United States?," by Geoffrey Shepherd, et al - Iowa Experiment Station Research Bulletin 270, Jan. 1940, pp. 58, Figs. 16.

"Quality Lamb Production," by C.W. McDonald - Iowa Experiment Station Bulletin p4, Mar. 1940, pp. 30, Figs. 14.

"Feeding Range Lambs in Kansas," by Rufus F. Cox - Kansas Experiment Station Bulletin 287, Nov. 1939, pp. 80, Figs. 45.

"The Relation of Nutrition to the Development of Necrotic Enteritis in Swine," by G. K. Davis, et al - Michigan Experiment Station Technical Bulletin 170, Feb. 1940, pp. 23, Figs. 6.

"Range Sheep Production in Northeastern Nevada - Production and Earning Power, 1933-1938, Inclusive; Long-Time Situation, 1910-1938," by C. E. Fleming, et al - Nevada Experiment Station Bulletin 151, Jan. 1940, pp. 27, Figs. 4, Tables 10.

"A Comparison of Treatments on Permanent Pastures," by H. B. Sprague, et al - New Jersey Experiment Station Bulletin 673, Mar. 1940, pp. 16, Tables 5.

"Canning Meats on the Farm," by J. R. Hawkins - South Carolina Extension Service Bulletin 94, Jan. 1940, pp. 15.

"Pigs for Profit," by John S. Robinson - Tennessee Extension Service Publication 237, May 1940, pp. 24, illus.

"1940 Livestock Improvement Campaign - Field Workers' Blue Book" prepared by Office of Animal Husbandry Extension, West Virginia University, Morgantown, W. Va. - pp. 88, (Mimeo.)

"The Relative Merits of Producing Creep-Fed, Feeder, and Lot-Fattened Calves in West Virginia," by C.V. Wilson and E.W. McComas - West Virginia Experiment Station Bulletin 295, Nov. 1939, pp. 11.

"Minerals for Livestock," by G. Bohstedt - Wisconsin Extension Service Circular 297, Feb. 1940, pp. 8, illus.

"4-H Baby Beef Club Project," by Tony Fellhauer - Wyoming Extension Service Circular 68, Mar. 1940, pp. 42, Figs. 19.

#### Other

"Animal Breeding" - a textbook by L. M. Winters, published by John Wiley & Sons, New York City - revised and enlarged, 1939.

"Beef Cattle - Their Feeding and Management in the Corn Belt," by R. R. Snapp, published by John Wiley & Sons, New York City.

"Pastures for Horses," by Chester F. Hockley - published by The Davison Chemical Corporation, Baltimore, Md. - 19-page illustrated bulletin.

"Progress in Reducing Live Stock Diseases and Waste in Marketing" (1939 Report of The National Live Stock Loss Prevention Board) - by H.R. Smith, General Manager, 700 Exchange Bldg., Union Stock Yards, Chicago, Ill., pp. 31, illus.

"Record of Proceedings of The American Society of Animal Production Meeting, Dec. 1-3, 1939" - published by the Society - R.M. Bethke, Sec.-Treas., Wooster, Ohio, pp. 488.

"The Western Horse" by Jno. A. Gorman, University of Wyoming - published by The Interstate, Danville, Ill.

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Above all else, even though your energies flag and petty irritations may take some of the zest out of your work, you must keep alive in the men and women and the boys and girls who look to you for guidance, the hope for an increasingly better way of life on the farm in America and the vision in which prosperity will give substance and beauty to every farm home. --C.W. Warburton on 25th Anniversary of Extension Work.

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A society geared to passive satisfaction without participation and to conspicuous expenditure must soon be undermined. We must not permit ourselves to be hypnotized by the liberal delusion that the things people have been educated to demand ... are the things they most need.

--T. Swann Harding.

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In words, as fashions, the same rule will hold;  
Alike fantastic, if too new, or old.  
Be not the first by whom the new are tried,  
Nor yet the last to lay the old aside.

--Pope in Essay on Criticism

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